

SEQUENCE LISTING

<110> Ip, Nancy Y
Cheung, William M W

<120> DNA SEQUENCE ENCODING A RETINOIC ACID REGULATED PROTEIN

<130> FP4220B

<150> US 10/409,511

<151> 2003-04-08

<160> 5

<170> PatentIn version 3.2

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<212> DNA

<213> Homo sapiens

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cc 120

ctg atg ctc ttc aat tcg gtg ctc cgc cag ccc cag ctt ggc gtc ctg
168

Met Leu Phe Asn Ser Val Leu Arg Gln Pro Gln Leu Gly Val Leu

1 5 10 15

aga aat gga tgg tct tca caa tac cct ctt caa tcc ctt ctg act ggt
216

Arg Asn Gly Trp Ser Ser Gln Tyr Pro Leu Gln Ser Leu Leu Thr Gly

20 25 30

tat cag tgc agt ggt aat gat gaa cac act tct tat gga gaa aca gga
264

Tyr Gln Cys Ser Gly Asn Asp Glu His Thr Ser Tyr Gly Glu Thr Gly

35 40 45

gtc cca gtt cct cct ttt gga tgt acc ttc tct tct gct ccc aat atg
 312

Val Pro Val Pro Pro Phe Gly Cys Thr Phe Ser Ser Ala Pro Asn Met

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55

60

gaa cat gta cta gca gtt gcc aat gaa gaa ggc ttt gtt cga ttg tat
 360

Glu His Val Leu Ala Val Ala Asn Glu Glu Gly Phe Val Arg Leu Tyr

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75

aac aca gaa tca caa agt ttc aga aag aag tgc ttc aaa gaa tgg atg
 408

Asn Thr Glu Ser Gln Ser Phe Arg Lys Lys Cys Phe Lys Glu Trp Met

80

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90

95

gct cac tgg aat gcc gtc ttt gac ctg gcc tgg gtt cct ggt gaa ctt
 456

Ala His Trp Asn Ala Val Phe Asp Leu Ala Trp Val Pro Gly Glu Leu

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aaa ctt gtt aca gca gca ggt gat caa aca gca aaa ttt tgg gac gta
 504

Lys Leu Val Thr Ala Ala Gly Asp Gln Thr Ala Lys Phe Trp Asp Val

115

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125

aaa gct ggt gag ctg att gga aca tgc aaa ggt cat caa tgc agc ctc
 552

Lys Ala Gly Glu Leu Ile Gly Thr Cys Lys Gly His Gln Cys Ser Leu

130

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aag tca gtt gcc ttt tct aag ttt gag aaa gct gta ttc tgt acg ggt
 600

Lys Ser Val Ala Phe Ser Lys Phe Glu Lys Ala Val Phe Cys Thr Gly

145

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155

gga aga gat ggc aac att atg gtc tgg gat acc agg tgc aac aaa aaa

648

Gly Arg Asp Gly Asn Ile Met Val Trp Asp Thr Arg Cys Asn Lys Lys
 160 165 170 175

gat ggg ttt tat agg caa gtg aat caa atc agt gga gct cac aat acc
 696
 Asp Gly Phe Tyr Arg Gln Val Asn Gln Ile Ser Gly Ala His Asn Thr
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tca gac aag caa acc cct tca aaa ccc aag aag aaa cag aat tca aaa
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 Ser Asp Lys Gln Thr Pro Ser Lys Pro Lys Lys Gln Asn Ser Lys
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 792
 Gly Leu Ala Pro Ser Val Asp Phe Gln Gln Ser Val Thr Val Val Leu
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 Phe Gln Asp Glu Asn Thr Leu Val Ser Ala Gly Ala Val Asp Gly Ile
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 Ile Lys Val Trp Asp Leu Arg Lys Asn Tyr Thr Ala Tyr Arg Gln Glu
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ccc ata gca tcc aag tct ttc ctg tac cca ggt agc agc act cga aaa
 936
 Pro Ile Ala Ser Lys Ser Phe Leu Tyr Pro Gly Ser Ser Thr Arg Lys
 260 265 270

ctt gga tat tca agt ctg att ttg gat tcc act ggc tct act tta ttt
 984
 Leu Gly Tyr Ser Ser Leu Ile Leu Asp Ser Thr Gly Ser Thr Leu Phe

275

280

285

gct aat tgc aca gac gat aac atc tac atg ttt aat atg act ggg ttg
 1032

Ala Asn Cys Thr Asp Asp Asn Ile Tyr Met Phe Asn Met Thr Gly Leu

290

295

300

aag act tct cca gtg gct att ttc aat gga cac cag aac tct acc ttt
 1080

Lys Thr Ser Pro Val Ala Ile Phe Asn Gly His Gln Asn Ser Thr Phe

305

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tat gta aaa tcc agc ctt agt cca gat gac cag ttt tta gtc agt ggc
 1128

Tyr Val Lys Ser Ser Leu Ser Pro Asp Asp Gln Phe Leu Val Ser Gly

320

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330

335

tca agt gat gaa gct gcc tac ata tgg aag gtc tcc aca ccc tgg caa
 1176

Ser Ser Asp Glu Ala Ala Tyr Ile Trp Lys Val Ser Thr Pro Trp Gln

340

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cct cct act gtg ctc ctg ggt cat tct caa gag gtc acg tct gtg tgc
 1224

Pro Pro Thr Val Leu Leu Gly His Ser Gln Glu Val Thr Ser Val Cys

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tgg tgt cca tct gac ttc aca aag att gct acc tgt tct gat gac aat
 1272

Trp Cys Pro Ser Asp Phe Thr Lys Ile Ala Thr Cys Ser Asp Asp Asn

370

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aca cta aaa atc tgg cgc ttg aat aga ggc tta gag gag aaa cca gga
 1320

Thr Leu Lys Ile Trp Arg Leu Asn Arg Gly Leu Glu Glu Lys Pro Gly

385

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395

ggt gat aaa ctt tcc acg gtg ggt tgg gcc tct cag aag aaa aaa gag
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 Gly Asp Lys Leu Ser Thr Val Gly Trp Ala Ser Gln Lys Lys Lys Glu
 400 405 410 415

tca aga cct ggc cta gta aca gta acg agt agc cag agt act cct gcc
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 Ser Arg Pro Gly Leu Val Thr Val Thr Ser Ser Gln Ser Thr Pro Ala
 420 425 430

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 Lys Ala Pro Arg Val Lys Cys Asn Pro Ser Asn Ser Ser Pro Ser Ser
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 1512
 Ala Ala Cys Ala Pro Ser Cys Ala Gly Asp Leu Pro Leu Pro Ser Asn
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act cct acg ttc tct att aaa acc tct cct gcc aag gcc ccg tct ccc
 1560
 Thr Pro Thr Phe Ser Ile Lys Thr Ser Pro Ala Lys Ala Arg Ser Pro
 465 470 475

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 1608
 Ile Asn Arg Arg Gly Ser Val Ser Ser Val Ser Pro Lys Pro Pro Ser
 480 485 490 495

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 1656
 Ser Phe Lys Met Ser Ile Arg Asn Trp Val Thr Arg Thr Pro Ser Ser
 500 505 510

tca cca ccc atc act cca cct gct tcg gag acc aag atc atg tct ccg
 1704
 Ser Pro Pro Ile Thr Pro Pro Ala Ser Glu Thr Lys Ile Met Ser Pro

515

520

525

aga aaa gcc ctt att cct gtg agc cag aag tca tcc caa gca gag gct
 1752

Arg Lys Ala Leu Ile Pro Val Ser Gln Lys Ser Ser Gln Ala Glu Ala

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tgc tct gag tct aga aat aga gta aag agg agg cta gac tca agc tgt
 1800

Cys Ser Glu Ser Arg Asn Arg Val Lys Arg Arg Leu Asp Ser Ser Cys

545

550

555

ctg gag agt gtg aaa caa aag tgt gtg aag agt tgt aac tgt gtg act
 1848

Leu Glu Ser Val Lys Gln Lys Cys Val Lys Ser Cys Asn Cys Val Thr

560

565

570

575

gag ctt gat ggc caa gtt gaa aat ctt cat ttg gat ctg tgc tgc ctt
 1896

Glu Leu Asp Gly Gln Val Glu Asn Leu His Leu Asp Leu Cys Cys Leu

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585

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Ala Gly Asn Gln Glu Asp Leu Ser Lys Asp Ser Leu Gly Pro Thr Lys

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tca agc aaa att gaa gga gct ggt acc agt atc tca gag cct ccg tct
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Ser Ser Lys Ile Glu Gly Ala Gly Thr Ser Ile Ser Glu Pro Pro Ser

610

615

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Pro Ile Ser Pro Tyr Ala Ser Glu Ser Cys Gly Thr Leu Pro Leu Pro

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 Leu Arg Pro Cys Gly Glu Gly Ser Glu Met Val Gly Lys Glu Asn Ser
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tcc cca gag aat aaa aac tgg ttg ttg gcc atg gca gcc aaa cg^g aag
 2136
 Ser Pro Glu Asn Lys Asn Trp Leu Leu Ala Met Ala Ala Lys Arg Lys
 660 665 670

gct gag aat cca tct cca cga agt ccg tca tcc cag aca ccc aat tcc
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 Ala Glu Asn Pro Ser Pro Arg Ser Pro Ser Ser Gln Thr Pro Asn Ser
 675 680 685

agg aga cag agc gga aag aca ttg cca agc ccg gtc acc atc acg ccc
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 Arg Arg Gln Ser Gly Lys Thr Leu Pro Ser Pro Val Thr Ile Thr Pro
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agc tcc atg agg aaa atc tgc aca tac ttc cat aga aag tcc cag gag
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 Ser Ser Met Arg Lys Ile Cys Thr Tyr Phe His Arg Lys Ser Gln Glu
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gac ttc tgt ggt cct gaa cac tca aca gaa tta tagattctaa tctgagtg
 ag 2333
 Asp Phe Cys Gly Pro Glu His Ser Thr Glu Leu
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Gln Cys Ser Gly Asn Asp Glu His Thr Ser Tyr Gly Glu Thr Gly Val
 35 40 45

Pro Val Pro Pro Phe Gly Cys Thr Phe Ser Ser Ala Pro Asn Met Glu
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His Val Leu Ala Val Ala Asn Glu Glu Gly Phe Val Arg Leu Tyr Asn

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Thr Glu Ser Gln Ser Phe Arg Lys Lys Cys Phe Lys Glu Trp Met Ala

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95

His Trp Asn Ala Val Phe Asp Leu Ala Trp Val Pro Gly Glu Leu Lys

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Leu Val Thr Ala Ala Gly Asp Gln Thr Ala Lys Phe Trp Asp Val Lys

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120

125

Ala Gly Glu Leu Ile Gly Thr Cys Lys Gly His Gln Cys Ser Leu Lys

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Ser Val Ala Phe Ser Lys Phe Glu Lys Ala Val Phe Cys Thr Gly Gly

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Arg Asp Gly Asn Ile Met Val Trp Asp Thr Arg Cys Asn Lys Lys Asp

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175

Gly Phe Tyr Arg Gln Val Asn Gln Ile Ser Gly Ala His Asn Thr Ser

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185

190

Asp Lys Gln Thr Pro Ser Lys Pro Lys Lys Gln Asn Ser Lys Gly

195

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Leu Ala Pro Ser Val Asp Phe Gln Gln Ser Val Thr Val Val Leu Phe
210 215 220

Gln Asp Glu Asn Thr Leu Val Ser Ala Gly Ala Val Asp Gly Ile Ile
225 230 235 240

Lys Val Trp Asp Leu Arg Lys Asn Tyr Thr Ala Tyr Arg Gln Glu Pro
245 250 255

Ile Ala Ser Lys Ser Phe Leu Tyr Pro Gly Ser Ser Thr Arg Lys Leu
260 265 270

Gly Tyr Ser Ser Leu Ile Leu Asp Ser Thr Gly Ser Thr Leu Phe Ala
275 280 285

Asn Cys Thr Asp Asp Asn Ile Tyr Met Phe Asn Met Thr Gly Leu Lys
290 295 300

Thr Ser Pro Val Ala Ile Phe Asn Gly His Gln Asn Ser Thr Phe Tyr
305 310 315 320

Val Lys Ser Ser Leu Ser Pro Asp Asp Gln Phe Leu Val Ser Gly Ser
325 330 335

Ser Asp Glu Ala Ala Tyr Ile Trp Lys Val Ser Thr Pro Trp Gln Pro
340 345 350

Pro Thr Val Leu Leu Gly His Ser Gln Glu Val Thr Ser Val Cys Trp
355 360 365

Cys Pro Ser Asp Phe Thr Lys Ile Ala Thr Cys Ser Asp Asp Asn Thr
370 375 380

Leu Lys Ile Trp Arg Leu Asn Arg Gly Leu Glu Glu Lys Pro Gly Gly
385 390 395 400

Asp Lys Leu Ser Thr Val Gly Trp Ala Ser Gln Lys Lys Glu Ser
405 410 415

Arg Pro Gly Leu Val Thr Val Thr Ser Ser Gln Ser Thr Pro Ala Lys
420 425 430

Ala Pro Arg Val Lys Cys Asn Pro Ser Asn Ser Ser Pro Ser Ser Ala
435 440 445

Ala Cys Ala Pro Ser Cys Ala Gly Asp Leu Pro Leu Pro Ser Asn Thr
450 455 460

Pro Thr Phe Ser Ile Lys Thr Ser Pro Ala Lys Ala Arg Ser Pro Ile
465 470 475 480

Asn Arg Arg Gly Ser Val Ser Ser Val Ser Pro Lys Pro Pro Ser Ser

485

490

495

Phe Lys Met Ser Ile Arg Asn Trp Val Thr Arg Thr Pro Ser Ser Ser

500

505

510

Pro Pro Ile Thr Pro Pro Ala Ser Glu Thr Lys Ile Met Ser Pro Arg

515

520

525

Lys Ala Leu Ile Pro Val Ser Gln Lys Ser Ser Gln Ala Glu Ala Cys

530

535

540

Ser Glu Ser Arg Asn Arg Val Lys Arg Arg Leu Asp Ser Ser Cys Leu

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550

555

560

Glu Ser Val Lys Gln Lys Cys Val Lys Ser Cys Asn Cys Val Thr Glu

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Leu Asp Gly Gln Val Glu Asn Leu His Leu Asp Leu Cys Cys Leu Ala

580

585

590

Gly Asn Gln Glu Asp Leu Ser Lys Asp Ser Leu Gly Pro Thr Lys Ser

595

600

605

Ser Lys Ile Glu Gly Ala Gly Thr Ser Ile Ser Glu Pro Pro Ser Pro

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615

620

Ile Ser Pro Tyr Ala Ser Glu Ser Cys Gly Thr Leu Pro Leu Pro Leu
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Arg Pro Cys Gly Glu Gly Ser Glu Met Val Gly Lys Glu Asn Ser Ser
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Pro Glu Asn Lys Asn Trp Leu Leu Ala Met Ala Ala Lys Arg Lys Ala
660 665 670

Glu Asn Pro Ser Pro Arg Ser Pro Ser Ser Gln Thr Pro Asn Ser Arg
675 680 685

Arg Gln Ser Gly Lys Thr Leu Pro Ser Pro Val Thr Ile Thr Pro Ser
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<213> Homo sapiens

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